AMENDMENTS TO THE CLAIMS

Claim 1. (original) A method of filtering an optical signal, comprising:

receiving at least one input optical signal;

forming first and second optical signals using the at least one input optical signal;

modifying at least one portion of the first optical signal using a plurality of non-waveguiding electro-optic phase adjusters; and

forming an output optical signal by combining the first optical signal, including the at least one modified portion of the first optical signal, with the second optical signal.

Claim 2. (original) The method of claim 1, wherein forming the first and second optical signals comprises forming the first and second optical signals using an optical coupler.

Claim 3. (original) The method of claim 1, wherein forming the first and second optical signals comprises providing the first and second optical signals to first and second waveguides, respectively.

Claim 4. (original) The method of claim 3, wherein providing the first and second optical signals to first and second waveguides, respectively, comprises providing the first and second optical signals to first and second waveguides having approximately equal optical path lengths.

Claim 5. (currently amended) The method of ~~any of claims~~ claim 1 ~~to 4~~, wherein modifying the at least one portion of the first optical signal using the plurality of non-waveguiding electro-optic phase adjusters comprises demultiplexing the input optical signal using an optical demultiplexer.

Claim 6. (original) The method of claim 5, wherein demultiplexing the input optical signal comprises demultiplexing the input optical signal into a plurality of wavelength bands.

Claim 7. (original) The method of claim 5, wherein modifying the at least one portion of the first optical signal comprises providing the demultiplexed input optical signal to the plurality of non-waveguiding electro-optic phase adjusters.

Claim 8. (original) The method of claim 7, wherein modifying the at least one portion of the first optical signal comprises introducing at least one phase shift to at least one portion of the demultiplexed input optical signal using at least one of the plurality of non-waveguiding electro-optic phase adjusters.

Claim 9. (original) The method of claim 8, wherein modifying the at least one portion of the first optical signal comprises multiplexing the demultiplexed input optical signal, including the at least one modified portion of the first optical signal.

Claim 10. (currently amended) The method of ~~any of claims~~ claim 1 ~~to 9~~, wherein forming the output optical signal comprises combining the first optical signal, including the at least one modified portion of the first optical signal, with the second optical signal using an optical coupler.

Claim 11. (original) The method of claim 1, wherein modifying the at least one portion of the first optical signal using the plurality of non-waveguiding electro-optic phase adjusters comprises providing the at least one portion of the first optical signal to at least one of the plurality of non-waveguiding electro-optic phase adjusters and providing at least one reflected portion of the first optical signal to the at least one of the plurality of non-waveguiding electro-optic phase adjusters.

Claim 12. (original) An apparatus, comprising:

an optical demultiplexer;

a plurality of non-waveguiding electro-optic phase adjusters optically coupled to the optical demultiplexer; and

a control unit coupled to the plurality of electro-optic phase adjusters.

Claim 13. (original) The apparatus of claim 12, wherein the optical demultiplexer, the plurality of non-waveguiding electro-optic phase adjusters, and the control unit are formed on a planar waveguide platform.

Claim 14. (original) The apparatus of claim 13, wherein the planar waveguide platform is at least one of a polymer, a silica-on-silicon, or a semiconductor waveguide platform.

Claim 15. (original) The apparatus of claim 12, wherein each of the plurality of non-waveguiding electro-optic phase adjusters comprise:

a first optical transmission medium;

a second optical transmission medium;

a slot disposed adjacent to the first and second optical transmission media, the slot being adapted to receive an electro-optically active element; and

at least one electrode deployed proximate the slot, the at least one electrode being adapted to provide at least a portion of a variable electric field within the slot.

Claim 16. (original) The apparatus of claim 15, wherein the slot has at least one curved edge.

Claim 17. (original) The apparatus of claim 15, wherein the first optical transmission medium is a waveguide.

Claim 18. (currently amended) The apparatus of ~~any of claims~~ claim 15 ~~to 17~~, wherein the second optical transmission medium is a waveguide.

Claim 19. (currently amended) The apparatus of ~~any of claims~~ claim 15 ~~to 18~~, wherein the electro-optically active element is at least one of a liquid crystal and a polymer-dispersed liquid crystal.

Claim 20. (currently amended) The apparatus of ~~any of claims~~ claim 12 ~~to 19~~, wherein the control unit is capable of providing at least one signal indicative of a desired phase change to at least one of the plurality of non-waveguiding electro-optic phase adjusters.

Claim 21. (currently amended) The apparatus of ~~any of claims~~ claim 12 ~~to 19~~, wherein the optical demultiplexer is adapted to provide light in a plurality of selected frequency bands to a corresponding plurality of non-waveguiding electro-optic phase adjusters.

Claim 22. (original) The apparatus of claim 21, wherein the optical multiplexer is adapted to receive light in the plurality of selected frequency bands from the corresponding plurality of non-waveguiding electro-optic phase adjusters.

Claim 23. (currently amended) The apparatus of ~~any of claims~~ claim 12 ~~to 22~~, further comprising an optical multiplexer optically coupled to the plurality of electro-optic phase adjusters.

Claim 24. (original) The apparatus of claim 23, wherein the optical multiplexer is adapted to combine the light received in the plurality of selected frequency bands.

Claim 25. (original) The apparatus of claim 24, wherein the optical demultiplexer and the optical multiplexer are a single device.

Claim 26. (currently amended) The apparatus of ~~any of claims~~ claim 12 ~~to 25~~, further comprising a mirror optically coupled to the plurality of electro-optic phase adjusters.

Claim 27. (original) The apparatus of claim 26, further comprising a wave plate deployed adjacent the mirror and between the mirror and the plurality of electro-optic phase adjusters.

Claim 28. (original) An electro-optically tunable optical filter, comprising:

a first optical transmission medium;

a second optical transmission medium;

a first optical coupler for coupling portions of the first and second optical transmission media;

an optical demultiplexer coupled to the second optical transmission medium;

a plurality of non-waveguiding electro-optic phase adjusters optically coupled to the optical demultiplexer;

an optical multiplexer optically coupled to the plurality of non-waveguiding electro-optic phase adjusters;

a third optical transmission medium optically coupled to the optical multiplexer; and

a second optical coupler for coupling portions of the second and the third optical transmission media.

Claim 29. (original) The electro-optically tunable optical filter of claim 28, wherein the first, second, and third optical transmission media are waveguides.

Claim 30. (currently amended) The electro-optically tunable optical filter of claim 28 ~~or 29~~, wherein the interferometer is formed on a planar waveguide platform.

Claim 31. (original) The electro-optically tunable optical filter of claim 30, wherein the planar waveguide platform is at least one of a polymer, a silica-on-silicon, or a semiconductor waveguide platform.

Claim 32. (currently amended) The electro-optically tunable optical filter of ~~any of claims~~ claim 28 ~~to 31~~, wherein each of the plurality of non-waveguiding electro-optic phase adjusters comprise:

a first waveguide optically coupled to the optical demultiplexer;

a second waveguide optically coupled to the optical multiplexer;

a slot disposed adjacent to the first and second waveguides, the slot being adapted to receive an electro-optically active element; and

at least one electrode deployed proximate the slot, the at least one electrode being adapted to provide at least a portion of a variable electric field within the slot.

Claim 33. (original) The electro-optically tunable optical filter of claim 32, wherein the electro-optically active element is at least one of a liquid crystal and a polymer-dispersed liquid crystal.

Claim 34. (currently amended) The electro-optically tunable optical filter of ~~any of claims~~ claim 28 ~~to 33~~, further comprising a control unit coupled to the plurality of non-waveguiding electro-optic phase adjusters.

Claim 35. (original) The electro-optically tunable optical filter of claim 34, wherein the control unit is capable of providing at least one signal indicative of at least one selected phase change to at least one of the plurality of non-waveguiding electro-optic phase adjusters.

Claim 36. (original) The electro-optically tunable optical filter of claim 34, wherein the control unit is capable of providing the at least one signal indicative of the at least one selected phase change such that the interferometer produces a filtered transfer function.

Claim 37. (original) An electro-optically tunable optical filter, comprising:

a first optical transmission medium;

a second optical transmission medium;

a first optical coupler for coupling portions of the first and second optical transmission media;

an optical demultiplexer coupled to the second optical transmission medium;

a plurality of non-waveguiding electro-optic phase adjusters optically coupled to the optical demultiplexer;

a control unit coupled to the plurality of electro-optic phase adjusters; and

a mirror optically coupled to the plurality of electro-optic phase adjusters.

Claim 38. (original) The electro-optically tunable optical filter of claim 37, wherein the first and second optical transmission media are waveguides.

Claim 39. (original) The electro-optically tunable optical filter of claim 37, wherein the interferometer is formed on a planar waveguide platform.

Claim 40. (original) The electro-optically tunable optical filter of claim 39, wherein the planar waveguide platform is at least one of a polymer, a silica-on-silicon, or a semiconductor waveguide platform.

Claim 41. (currently amended) The electro-optically tunable optical filter of ~~any of claims~~ claim 37 ~~to 40~~, wherein each of the plurality of non-waveguiding electro-optic phase adjusters comprise:

a first waveguide optically coupled to the optical demultiplexer;

a second waveguide optically coupled to the optical multiplexer;

a slot disposed adjacent to the first and second waveguides, the slot being adapted to receive an electro-optically active element; and

at least one electrode deployed proximate the slot, the at least one electrode being adapted to provide at least a portion of a variable electric field within the slot.

Claim 42. (original) The electro-optically tunable optical filter of claim 41, wherein the electro-optically active element is at least one of a liquid crystal and a polymer-dispersed liquid crystal.

Claim 43. (currently amended) The electro-optically tunable optical filter of ~~any of claims~~ claim 37 ~~to 42~~, wherein the control unit is capable of providing at least one signal indicative of at least one selected phase change to at least one of the plurality of non-waveguiding electro-optic phase adjusters.

Claim 44. (original) The electro-optically tunable optical filter of claim 43, wherein the control unit is capable of providing the at least one signal indicative of the at least one selected phase change such that the interferometer produces a filtered transfer function.

Claim 45. (canceled)

Claim 46. (canceled)